

nomy." By J. W. Lubbock, Esq. V.P. and Treasurer of the Royal Society.

The first part of this paper relates to the theory of the moon. The method of solution pursued by Clairaut consisted in the integration of differential equations, in which the true longitude of the moon is the independent variable: the time is then obtained in terms of the true longitude; and by the reversion of series, the longitude afterwards obtained in terms of the time. This method is the one adopted by Mayer, Laplace, and Damoiseau. The author has been led, by reflecting on the difficulties of this problem, to believe that the integration of the differential equations in which the time is the independent variable would be at least as easy as the former process; and it would possess the advantage of employing the same system of equations for the moon as for the planets. The lunar theory proposed by the author, and developed in this paper, is an extension of the equations given in his former *Researches in Physical Astronomy*, already published in the *Philosophical Transactions*; by including those terms, which, in consequence of the great eccentricity of the moon's orbit, are sensible; and by suppressing those which are insensible from the great distance of the sun, the disturbing body. He has not yet attempted to obtain numerical results, but proposes at some future time to engage in their computation.

In the second part of the paper, he investigates the precession of the equinoxes, on the supposition that the earth revolves in a resisting medium; an investigation which may also be considered as a sequel to the author's last paper on *Physical Astronomy*. The effects of the resistance of such a medium is to increase the latitude of the axis of rotation (reckoned from the equator of the figure) till it reaches  $90^\circ$ . Such is now the condition of the axis of the earth: but as the chances are infinitely great against this having been its original position, may not its attainment of this position be ascribed to the resistance of a medium of small density acting for a great length of time,—a supposition which may account for many geological indications of changes having taken place in the climates of the earth? The operation of such a cause would be also sensible in the case of comets: and the accuracy with which the eccentricity of the Halleian comet of 1759 is known, would appear to afford a favourable opportunity of verifying this hypothesis.

A paper was read, entitled, "An Account of the Construction and Verification of the Imperial Standard Yard for the Royal Society." By Captain Henry Kater, F.R.S.

The scale of the standard, of which an account is given in this paper, is constructed in a manner described in the *Philosophical Transactions* for 1830. The support is of brass 40 inches long, 17.5 inches wide, and 0.6 of an inch in thickness. A brass plate seven-hundredths of an inch thick was made to slide freely upon the support in a dove-tail groove formed by two side plates, and was then fixed to the support by a screw passing through its middle.

This plate carries the divisions, which are fine dots upon gold discs let into the brass; the scale is divided into inches, and there is one inch to the left of zero, which is subdivided into tenths. The scale is the work of Mr. Dollond. The paper is concluded by an account of the precautions which were taken to ensure the accuracy of the plane surface on which the bar rested, while the comparisons were made with the microscopic apparatus described in the *Philosophical Transactions* for 1821. The results are given in a table.

A paper was read, entitled, "An Experimental Examination of the Blood found in the Vena Portæ." By James Thackeray, M.D. Communicated by Sir Astley Cooper, Bart. V.P.R.S.

The author, in the course of an inquiry into the properties of the blood, was led to notice some peculiarities in the contents of the vena portæ, and to investigate this subject more minutely. The results of the experiments which he made for this purpose are chiefly the following. The blood contained in the vena portæ is darker than that of the other veins, inclining more to a ruddy hue than to the Modena red. Being less homogeneous, it has the appearance of being less perfectly elaborated. Its specific gravity was found to be very variable, but it is in general less than ordinary venous blood. It coagulates much more quickly, and contains a larger proportion of serum, but a much smaller proportion of albumen, than blood taken from other veins. The serum obtained from it is redder than common serum, in consequence of its retaining much of the colouring matter of the blood: it has also a greater specific gravity, and yields, on exsiccation, a greater weight of solid matter. On the application of heat, it concretes more quickly, but much less completely, than blood from the jugular vein; which peculiarities are attributed by the author to the different state and imperfect formation of the albumen contained in it. The crassamentum of the blood from the vena portæ does not expel its serum so fully as blood from other vessels; but it remains a soft mass, unless artificial means be employed, and it yields a considerably smaller quantity of fibrin.

The Ballot for William Snow Harris, Esq., which should have been taken at this Meeting, was postponed to the next Meeting, in consequence of there not being twenty-one Members present.

The Society then adjourned over Whitsuntide to the 2nd of June.

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June 2.

SIR ASTLEY COOPER, Bart. V.P., in the Chair.

William Snow Harris, Esq., and William Wilkins, Esq. R.A., were elected Fellows of the Society.

The following Presents were received, and thanks ordered for them:—